BookletChartTM

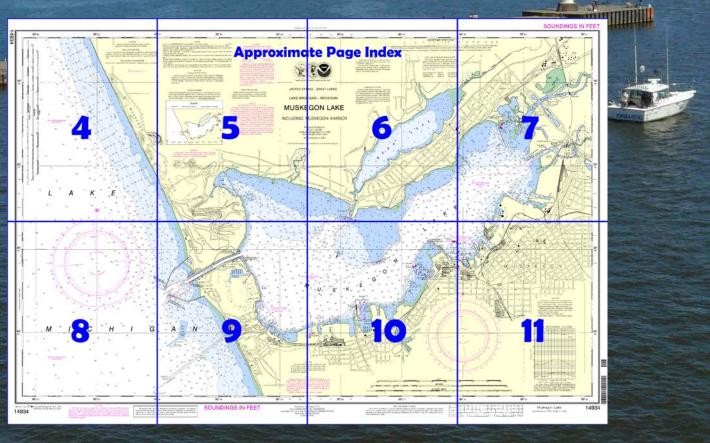
NORA TION OF COUNTRY O

Muskegon Lake, Including Muskegon Harbor

A reduced-scale NOAA nautical chart for small boaters When possible, use the full-size NOAA chart for navigation.



- Complete, reduced-scale nautical chart
- Print at home for free
- Convenient size
- Up-to-date with Notices to Mariners
- Compiled by NOAA's Office of Coast Survey, the nation's chartmaker



Published by the National Oceanic and Atmospheric Administration National Ocean Service Office of Coast Survey

<u>www.NauticalCharts.NOAA.gov</u> 888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart[™]?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=149
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(Selected Excerpts from Coast Pilot). Muskegon Harbor, 31 miles SSE of Little Sable Point, consists of Muskegon Lake and a dredged entrance channel which connects it with Lake Michigan. Facilities for a wide range of commerce are on the S shore of the harbor at the city of Muskegon, Mich., and at its E end. A lighted stack of the Consumers Energy Co. at the mouth of the Muskegon River in 43°15'16"N., 86°14'23"W. is prominent from Lake Michigan. Sand hills N and S of

the harbor entrance may obstruct the stack from some directions.

Muskegon South Breakwater Light (43°13'30"N., 86°20'48"W.), 70 feet above the water, is shown from a pyramidal tower on the outer end of the S breakwater; a fog signal is at the light.

Muskegon Lake is about 4 miles long and varies from 2 miles wide at the W end to as little as 0.6 mile in the E part. The lake has central depths of 25 to 79 feet. Near mid-length of the lake, shoals marked at the outer edges by lights extend from the N and S shores and restrict the available width of deep water to 1,600 feet. There are many obstructions in the shallow parts of the lake, including cribs, pipelines, and submerged pilings and dock ruins.

The North Channel of the **Muskegon River** flows into the NE end of Muskegon Lake. The channel, at a river stage of about 2 feet above extreme low water, has depths of 2½ to 9 feet for 33 miles above the mouth to the former dam at **Newaygo**, **Mich.** Two fixed bridges, with a reported least clearance of 8 feet, cross the river about 0.3 mile and 0.4 mile above the mouth.

Bear Lake parallels the NW side of the NE end of Muskegon Lake and has its outflow through a narrow channel into its N side. **North** A **speed limit** of 8 mph is enforced in Muskegon Harbor. (See **33 CFR 162.120,** chapter 2, for regulations.) A **slow-no wake speed** is enforced in the Bear Lake entrance channel.

A public docking facility is available mid-length of the S lakeshore at the Hartshorn Marina (43°13'48"N., 86°15'54"W.), jointly constructed by the city and the Michigan State Waterways Commission. Several private marinas are along the S shore of Lake Muskegon and can provide: transient berths, gasoline, diesel fuel, marine supplies, sewage pumpout, complete vessel repair, and hoists to 110 tons. A private marina is on the N shore at the outlet of Bear Lake. Transient berths, gasoline, diesel fuel, water, electricity, sewage pump-out, limited marine supplies, launching ramp, and harbormaster services are available. The harbormaster monitors VHF-FM channels 16 and 9. A 30-ton mobile hoist is available for engine repairs, and limited hull and electronic repairs.

Muskegon Harbor. Currents in the channel attain velocities up to 3 mph in either direction.

The outer basin is not adapted for anchorage of vessels, but reduces wave action in the entrance channel.

Mooring to the breakwaters, piers, and revetments is prohibited. Mariners are cautioned against navigating outside channel limits in the vicinity of structures protected by stone riprap. In 2001, a rock bed was reported 30 feet N of the South Breakwater Light.

Anchorage.—Muskegon Lake affords good anchorage, generally sand or mud bottom. Special anchorages are in the SW part of the lake and on the S side at Muskegon. (See 33 CFR 110.1 and 110.81, chapter 2, for limits and re he dredged entrance channel leads from deep water in Lake Michigan between converging breakwaters to an outer basin, thence between piers and revetments to Muskegon Lake. The outer ends of the breakwaters and piers, and the inner ends of piers, are marked by lights. A sound signal, which reportedly operates by keying the microphone five times on VHF-FM channel 79, is at the light on the south pier. (See Notices to Mariners and the latest edition of the chart for controlling depths.

Mooring to the breakwaters, piers, and revetments is prohibited. Mariners are cautioned against navigating outside channel limits in the vicinity of structures protected by stone riprap. In 2001, a rock bed was reported 30 feet north of the South Breakwater Light.

U.S. Coast Guard Rescue Coordination Center 24 hour Regional Contact for Emergencies

RCC Cleveland

Commander

9th CG District Cleveland. OH (216) 902-6117



Polyconic Projection Scale 1:15,000 North American Datum of 1983 (World Geodetic System 1984)

SOUNDINGS IN FEET

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Grand Rapids, MI KIG-63 Hesperia, MI West Olive, MI

WWF-36

162.550 MHz 162.475 MHz 162.425 MHz

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

During some winter months or when endan-

gered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine tables and submarine pipeline and cable areas are shown as:

Pipeline Area

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables, are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling. Covered wells may be marked by lighted or

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

BADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117. Radio direction-finder bearings to commercial

broadcasting stations are subject to error and

should be used with caution.

Station positions are shown thus:

(Accurate location) o(Approximate location)

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.051" northward and 0.212" westward to agree with this chart.

Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

Table of Selected Chart Notes

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coas Guard Light List and U.S. Coast Pilot for details.

NOTE Z NO-DISCHARGE ZONE, 40 CFR 140

NO-DISCHARGE ZUNE, 40 CFH 140
This chart falls entirely within the limits of a No-Discharge
Zone (NDZ). Under the Clean Water Act, Section 312, all
vessels operating within a No-Discharge Zone (NDZ) at
completely prohibited from discharging any sewage, treated
or untreated, into the waters. Commercial vessel sewage
shall include graywater. All vessels with an installed marine
sanitation device (MSD) that are navigating, moored,
anchored, or docked within a NDZ must have the MSD
disabled to prevent the overheard discharge of sewage altonored, or doubted within a NDZ finish have the Mod disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site. http://www.epa.gov/

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Detroit Michigan. Detroit, Michigan.
Refer to charted regulation section numbers.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

POTABLE WATER INTAKE

Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U.S. Coast Pilot 6 for important supplemental

SOURCE DIAGRAM

Most of the hydrography identified by the letter "I" was surveyed by the U.S. Army Corps of Engineers prior to 1974. Channels currently maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, <u>United States Coast Pilot</u>.

BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6

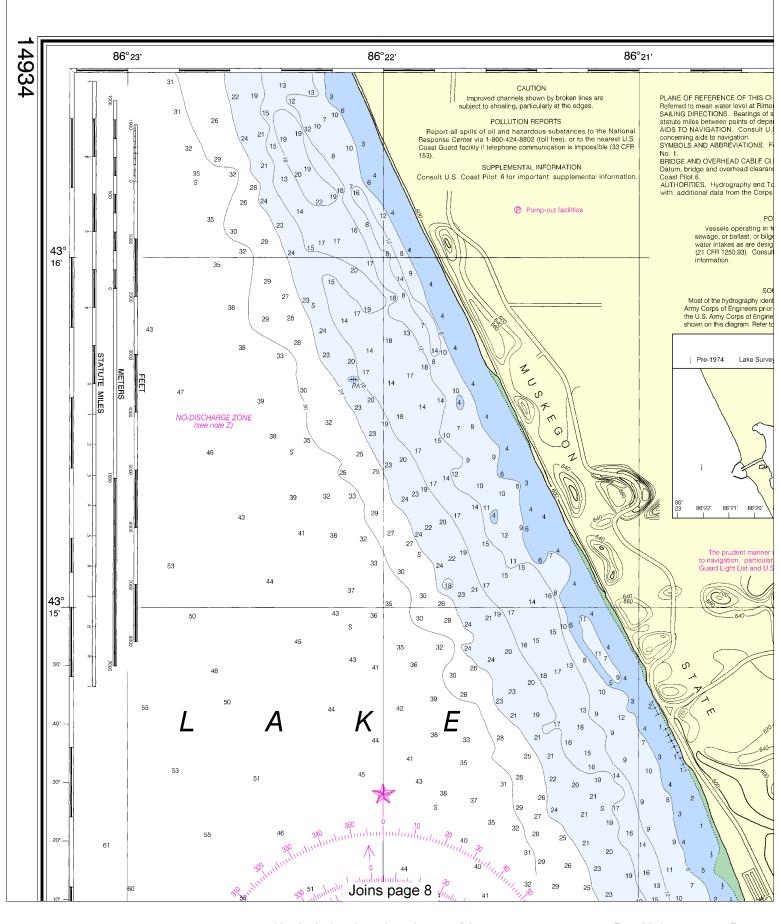
SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart

SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation

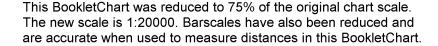
PLANE OF REFERENCE OF THIS CHART (Low Water Datum). Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985)

AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S Coast Guard.



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24 Joins page 9

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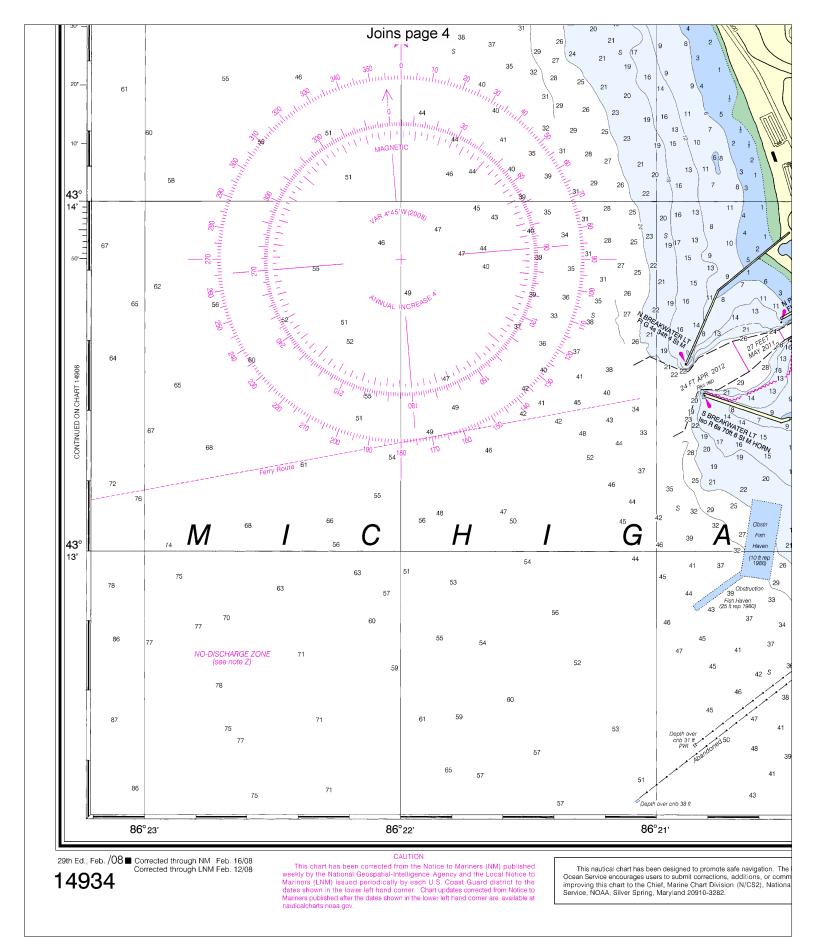
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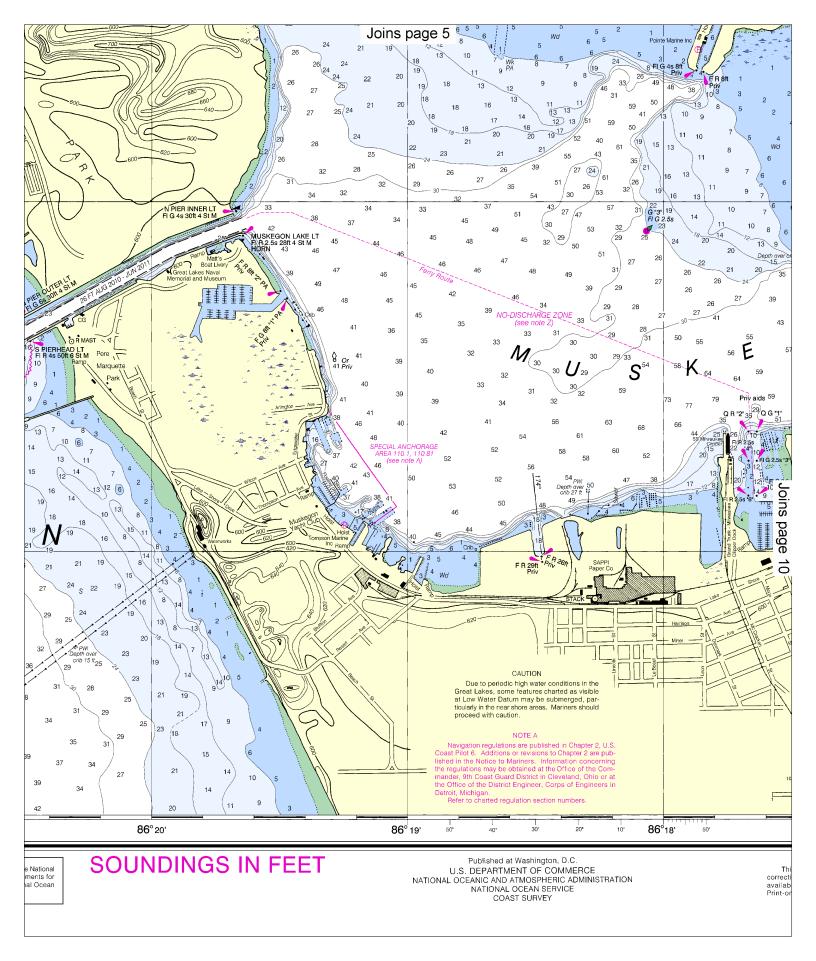


SOUNDINGS IN FEET 86° 16' 86°15' 86°14' LOGARITHMIC SPEED SCALE distance run (in any unit) and the other on minutes run. Without changing divider spread, place eed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots. NOAA WEATHER RADIO BROADCASTS The NOAA Weather Radio stations listed low provide continuous weather broadcasts, re reception range is typically 20 to 40 utical miles from the antenna site, but can be much as 100 nautical miles for stations at rand Rapids, MI esperia, MI est Olive, MI KIG-63 WWF-36 WXN-99 162.550 MHz 162.475 MHz 162.425 MHz 43° 16' 20 6 18 28 43° 15' 31 30 32 35 30 Joins page 11

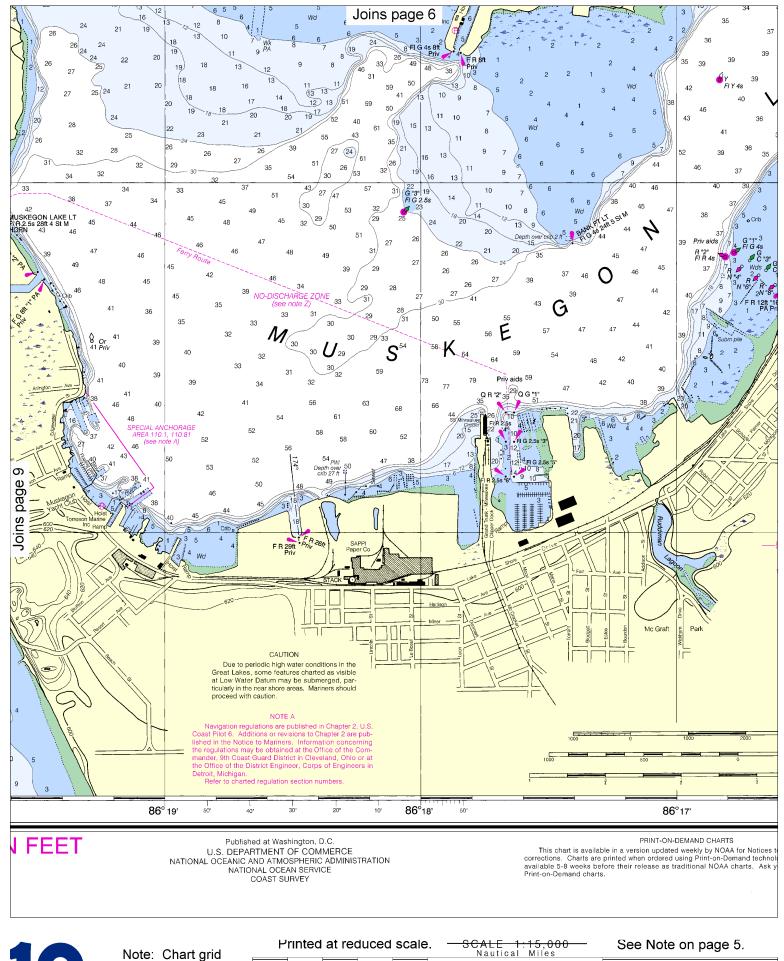


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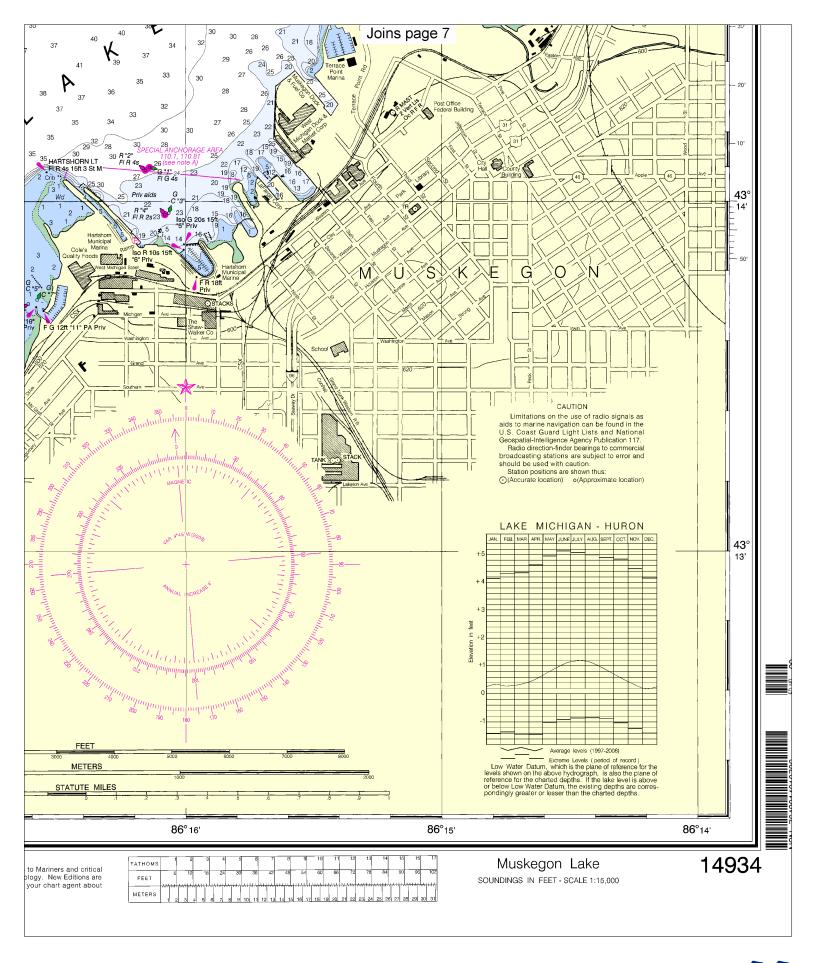






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VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.

Channel 9 – Communications between boats and ship-to-coast.

Channel 13 – Navigation purposes at bridges, locks, and harbors.

Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other

vessels. Contact the other vessel, agree to another channel, and then switch.

Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here. Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of

Emergency; Number of People on Board.

- · Release transmit button.
- Wait for 10 seconds If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!



NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

http://www.nws.noaa.gov/nwr/

Quick References

Nautical chart related products and information — http://www.nauticalcharts.noaa.gov

Online chart viewer — http://www.nauticalcharts.noaa.gov/mcd/NOAAChartViewer.html

Report a chart discrepancy — http://ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx

Chart and chart related inquiries and comments — http://ocsdata.ncd.noaa.gov/idrs/inquiry.aspx?frompage=ContactUs

Chart updates (LNM and NM corrections) — http://www.nauticalcharts.noaa.gov/mcd/updates/LNM_NM.html

Coast Pilot online — http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm

Tides and Currents — http://tidesandcurrents.noaa.gov

Marine Forecasts — http://www.nws.noaa.gov/om/marine/home.htm

National Data Buoy Center — http://www.ndbc.noaa.gov/

NowCoast web portal for coastal conditions — http://www.nowcoast.noaa.gov/

National Weather Service — http://www.weather.gov/

National Hurrican Center — http://www.nhc.noaa.gov/

Pacific Tsunami Warning Center — http://ptwc.weather.gov/

Contact Us — http://www.nauticalcharts.noaa.gov/staff/contact.htm



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This Booklet chart has been designed for duplex printing (printed on front and back of one sheet). If a duplex option is not available on your printer, you may print each sheet and arrange them back-to-back to allow for the proper layout when viewing.

